PT. SINKO PRIMA ALLOY

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Foreword

Please read the user manual carefully before using this product. The operating procedures specified in this user manual must be strictly followed. This manual describes abnormalities, and possible damage to the product or the user. See the following chapter for details. Failure to follow the user manual may result in abnormal measurements, damage to the device, or personal injury. The manufacturer is not responsible for the safety, reality and performance issues of such results due to the user's failure to comply with this user guide for use, maintenance or storage. The free service and repair also doesn't cover those errors.

The content in this user guide corresponds to the original product. For software improvements and some modifications, the content in this user guide is subject to change without prior notice, and we sincerely apologize for that.

Attention

Before using this product, the safety and effectiveness of the following should be considered:

- Protection against electric shock type: class I (AC power supply), internally powered equipment (power supplied by battery)
- Degree of protection against electric shock: CF type, defibrillation-resistant applied parts
- Working mode: equipment running continuously
- Enclosure protection class: IPX0
- Measurement results must be explained by a professional doctor combined with clinical symptoms.
- Reliability of use depends on whether the operating and maintenance instructions in this user manual are followed.
- Service life: 5 years.
- Date of manufacture: see label.
- Contraindications: none

⚠ **Warning: To ensure the safety and effectiveness of the device, use accessories recommended by the company. Device maintenance and repair should be carried out by:**
personal professional determined by the company. Do not reassemble the device.
Operator's responsibility

- The device must be operated by professionally trained medical staff, and stored by a dedicated person.
- The operator must read the User's Guide carefully before use, and strictly follow the operating procedures described in the User's Guide.
- Safety requirements have been fully considered in product design, but operators cannot ignore patient and device observations.
- The operator is responsible for providing product usage information to the company.

Corporate responsibility

- The company supplies quality products to users according to company standards.
- The company installs and debugs equipment and trains doctors on a contract basis.
- The company performs device repairs within the warranty period (one year) and maintenance services after the warranty period.
- The company responds timely to user reguest.

Statement

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Our company reserves the right to final explanation of this user guide, and reserves the right to change the contents of this user guide without prior notice, and reserves the right to change technology and product specifications.

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Chapter 1 Overview

1.1 Description

This product is a kind of electrocardiograph, which is capable of simultaneously sampling 12 leads of the ECG signal and printing the ECG waveform by thermal printing system. Its functions are as follows: record and display the ECG waveform in auto/manual mode; measuring ECG waveform parameters automatically, and automatic analysis; pacing ECG detection; prompt for electrode-off and out of paper; optional interface language (Chinese/English, etc.); built-in lithium battery, powered by AC or DC; Arbitrarily select lead rhythm to easily observe abnormal heart rate; case database management, etc.

1.2 Intended use

This product is suitable for hospitals, scientific research, wards, wards, ambulances and conducting medical consultations. It can be used by medical institutions to record human ECG signals, collect and extract ECG waveforms.

1.3 Main technical specifications

1.3.1 Environmental conditions

Operation:

a) Ambient temperature: +5 ℃ ~ + 35℃
b) Relative humidity: ≤80%
c) Atmospheric pressure: 860 hPa~1060 hPa
d) Power supply:
   Voltage: AC: 110-240V
   Frequency: 50/60Hz
   Input Power: ±150 VA
   Battery: 7.4V, rechargeable lithium battery 3700 mAh

Transport and Storage:

a) Ambient temperature: -40 ^{o}C ~ 55 ^{o}C
b) Relative humidity: ≤95%
c) Atmospheric pressure: 500 hPa ~ 1060 hPa

1.3.2 Input way: Floating and defibrillation protection
1.3.3 Leads: Standard 12 leads
1.3.4 Patient leakage current: <10μA
1.3.5 Input Impedance: ≥50 MΩ
1.3.6 Frequency response:

Input amplitude value	Input frequency and waveform	Re relative output response
1.0	0.67Hz~40Hz, Sine wave	±10% [a]
0.5	40Hz~100Hz, Sine wave	±10%, -30% [a]
0.25	100Hz~150Hz, Sine wave	±10%, -30% [a]
0.5	150Hz~500Hz, Sine wave	±10%, -100% [a]
1.5	≤1Hz, 200ms, Triangle wave	+0%, -10% [b]
[a] Relative to 10Hz [b] Relative to 200ms		

1.3.7 Time constant: 3.2s

1.3.8 CMRR: >60 dB; >100dB (plus filter)

1.3.9 Filters: Power frequency (AC50/60Hz), myoelectricity (25Hz/35Hz (-3 dB)), Baseline drift filter.

1.3.10 Recording method: Thermal printing system

1.3.11 Recording paper specifications: 80mm(W) X 20m(L) High-speed thermal paper

1.3.12 Time base selection (paper speed): 5 m/s, 6.25 m/s, 10 m/s, 12.5 m/s, 25 m/s, error: ±5%

1.3.13 Gain control (sensitivity): 2.5, 5, 10, 20, 40, 10/5, 20/10 mm /mV, accuracy ±2%;

1.3.14 Standard sensitivity: 10mm/mV±0.2mm/mV

1.3.15 Automatic record: record settings according to the format and automatic recording mode, automatically change leads, automatically measure and analyze.

1.3.16 Rhythm record: recording settings according to the rhythm recording format and mode, automatically measuring and analyzing.

1.3.17 Manual Record : record according to manual record format.

1.3.18 Measurement parameters: HR, PR interval, P duration, QRS duration, T duration, QT interval, Q-Tc, P axis, QRS axis, T axis, R(V5), S(V1), R(V5) + S(V1) amplitude.

1.3.19 Product safety type: Class I, Type CF, defibrillation resistant applied parts.

1.3.20 Polarization resistance voltage: ± 300 mV

1.3.21 Noise level: ≤15μVp-p

1.3.22 ECG signal input sampling frequency: 32 kHz

1.3.23 Sampling frequency of wave data processing: 1kHz

1.3.24 Sampling precision: 24-bit

1.3.25 Minimum detection signal: 10Hz, 20μ V (peak value) deflected sinusoidal signal can be detected.

1.3.26 Pacing detection channel: Standard II

1.3.27 Input signal accuracy: ±5%
1.3.28 Amplitude quantization: 5μ V/LSB
1.3.29 Dimensions: 315mm(L)*212mm (W)*77mm (H)
1.3.30 Weight: ± 2.25 kg (with accesories)
1.3.31 Time deviation between channels: <100 s

1.4 Main character

1.4.1 High resolution (8dots/mm) thermal array output system, no adjustment required. Frequency response up to 150Hz.
1.4.2 Record clear and precise three-channel ECG waveforms and comments in real-time and continuously. The statements include: lead marks, sensitivity, paper speed, filter status, etc.
1.4.3 In automatic mode, recording can be completed by one-button operation, which improves work efficiency.
1.4.4 Under the best DC conditions, the device can last for 10 hours, or print at least 3 hours.
1.4.5 Maximum 150 sheets of medical records can be stored in the device, which makes it easy for doctors to review and statistical information.
1.4.6 Beautiful and delicate appearance.
1.4.7 Protection level against liquid ingress: IPX0.
1.4.8 Use digital signal processing technology to perform AC filter, baseline filter and EMG filter on the ECG signal, to obtain high quality ECG.
1.4.9 With automatic measurement, automatic analysis function of regular ECG parameters, which reduces the doctor's workload and improves work efficiency.
1.4.10 With pacing ECG detection function.

1.5 Software overview

The ECG analysis program shows the results after analyzing the shape of the electrocardiogram, providing an additional reference for doctors to make a diagnosis. The results of the analysis cannot be used as the sole standard for diagnosis. A comprehensive evaluation should be carried out by a professional electrocardiogram technician and physician according to clinical experience and other test results.

This device is intended for use in all patient populations, as decided by the clinical physician. The analysis program only provides ECG analysis for patients over 3 years (including 3 years).
Software name: embedded software
Software specifications: none

Software version: V1.9.10
Version naming rules: V<major version number>. <minor version number>. <revised version number> Software version can be found in " About ".
Algorithms involved:
Name: ECG algorithm
Type: mature algorithm
Use: to convert the human body ECG signal into an intuitive waveform image and then analyze.
Clinical function: Electrocardiogram is an important method for clinical diagnosis of cardiovascular disease. How to use a computer to analyze ECG quickly, automatically and accurately has become a hot topic for scholars at home and abroad. The ECG algorithm is the key to the analysis and diagnosis of ECG signals, and its accuracy and reliability determine the effectiveness of the diagnosis and treatment of patients with heart disease.

Chapter 2 Safety Precautions

2.1 Make sure the device is placed on a flat workbench. Avoid strong vibration or impact when moving it.

2.2 When working with AC power, the power cord must be 3-core, the rated frequency and voltage of the AC power supply must match the identification in the manual and have sufficient capacity. If the supplied three-core power cord cannot be used, use the internal DC power supply or replace the three-core power cord that meets the standard requirements.

2.3 A perfect power supply system and grounding is required indoors.

2.4 If there is a question about the integrity of the protective earth wire or the reliability of the connection of the protective earth wire cannot be guaranteed, the device must be run on the built-in DC power supply.

2.5 Safety requirements have been fully considered in product design, but operators cannot ignore patient and device observations. Turn off the power or remove the electrodes if necessary to ensure patient safety.

2.6 Please turn off the device and unplug the power cord before changing the fuse or cleaning and disinfecting. Do not rub the screen with sharp materials.

2.7 Keep the device away from water, do not use or store in a place with high air pressure, humidity or temperature above standard, poor ventilation, or too much dust.

2.8 Do not use the device in areas with flammable anesthetic gases or other flammable chemicals, otherwise there is a danger of explosion or fire.

2.9 Do not use the device in a medical hyperbaric oxygen chamber, unless there is a danger of explosion or fire.

2.10 This device is not intended to act directly on the human heart. If this device is used with a cardiac defibrillator or other electrical stimulation device at the same time, disposable electrodes and an ECG lead cable with a defibrillation function should be selected. It is better not to use this device with other electrical stimulating devices at the same time. If necessary, there should be a professional technician guiding on the scene, and the selected accessories should be appointed by our company

2.11 When the electrocardiograph is used in conjunction with a high-frequency electric scalpel, the ECG electrodes must be kept away from the contact of the electric scalpel to prevent burning of the electrode wires caused by high-frequency sparks.

2.12 When the electrocardiograph is used in conjunction with a defibrillator, the operator should avoid contact with the patient or the bed. The defibrillation electrodes should not directly touch the ECG electrodes to prevent sparks from burning the device and the patient.

2.13 Please do not use the electrocardiograph in an environment disturbed by high-power devices such as high-voltage cables, X-rays, ultrasonic and electrical machines, keep the device away from emission sources such as cell phones.

2.14 If other equipment is connected to this ECG device, it must be a Class I device compliant with IEC60601-1. Since the total leakage current can injure the patient, leakage current monitoring is carried out and taken over by the connected equipment.

2.15 EMC related notes

The device complies with the safety standards for medical electrical equipment or system electromagnetic compatibility in IEC60601-1-2. Electromagnetic environments in excess of the IEC60601-1-2 standard may cause harmful interference to the device or prevent the device from performing its intended function or reduce its performance. Therefore, if there is a phenomenon that is not in accordance with its function when used, be sure to confirm and eliminate side effects before continuing to use it. The appropriate precautions for this situation are given in this manual.

- The device or system must not be used in close proximity to or stacked with other devices. If it must be used in close proximity to or stacked with other devices, it must be observed and verified that the device functions normally under the configuration in which it is used.
- Use of ACCESSORIES other than those specified by the MANUFACTURER of the device or system, may result in an increase in EMISSIONS or a decrease in the ME IMMUNEITY OF THE ME EQUIPMENT or SYSTEM.
- Effects of radiated electromagnetic waves: Use of mobile phones may affect the operation of the device. When installing medical electrical equipment, be sure to remind people around the device to turn off cell phones and small radios.
- Effects of electromagnetic shock and conduction waves: High-frequency noise from other equipment can enter the device through the AC socket. Please identify the noise source, if possible, stop using the equipment. If the equipment cannot be disabled, use noise-canceling equipment or take other measures to reduce its impact.
- Effects of static electricity: Static electricity in a dry environment (indoor) can affect the operation of the device, especially in winter. Before using the device, humidify the indoor air or discharge static electricity from the cable and operator.
- Effects of thunder and lightning: If there is thunder and lightning nearby, it can cause voltage spikes in the device. If you are concerned about a hazard, disconnect the AC power and use the internal power supply.

2.16 Notes on ECG waveform measurement and analysis.

2.16.1 Identification of P waves and Q waves is not always reliable with intensive EMG or AC interference. Similarly, ST segment and T waves with baseline deviation.

2.16.2 The winding and the unclear position of the ends of the S and T waves can cause errors in measurement.

2.16.3 When the R wave is not checked due to multiple loose leads or a low voltage QRS wave, the heart rate measurement can deviate greatly from the correct one.

2.16.4 In the case of low voltage QRS, calculation of the ECG axis and identification of the QRS wave boundary point is not always reliable.

2.16.5 Occasionally, a frequent ventricular premature complex can be identified as the dominant beat.

2.16.6 The incorporation of versatile arrhythmias can result in unreliable measurements because of the difficulty in distinguishing the P waves in such situations.

2.16.7 This device has an automatic analysis function which automatically analyzes the obtained ECG waveforms without reflecting all patient status. The results of the analysis sometimes do not match the doctor's diagnosis. Therefore, the final conclusion needs to be analyzed comprehensively by the doctor combined with the results of the analysis, clinical characterization of the patient and the results of other tests.

Chapter 3 Warranty

3.1 Under normal use, under strict observance of user manuals and operating records, in case of failure, please contact our customer service department. Our company has sales records and customer records for each device. Customers have 2years free warranty service from the date of delivery according to the following conditions. In order to provide you with a thorough and fast maintenance service, please send us a maintenance card in time.

3.2 Our company can adopt ways such as guidance, prompt service to the company or door-to-door service, etc. to carry out the warranty promise.

3.3 Even within the warranty period, the following repairs are chargeable.

3.3.1 Errors or injuries caused by misuse that are not in accordance with the user manual and operating records.

3.3.2 Mistakes or injuries caused by accidental falls after purchase.

3.3.3 Errors or injuries caused by repair, reconstruction, decay, etc. Not by our company.

3.3.4 Errors or injuries caused by improper storage or force majeure after purchase.

3.3.5 Error or injury caused by improper use of thermal recording paper.

3.4 The warranty period for accessories and spare parts is half a year. Power cord, recording paper, operating manual and packing materials are not included.

3.5 Our company is not responsible for any other connected device error caused by this device fault directly or indirectly.

3.6 The warranty will be void if we find the protection label has been destroyed.

3.7 For maintenance costs beyond the warranty period, our company recommends continuing to use the "Maintenance contract rules". Please refer to our customer service department for details.

Chapter 4 Working Principles and Structural Characteristics

4.1 Working principle and block diagram

4.1.1 Power supply unit

Power supply principle

After the AC power supply enters the switching power supply, it is converted into DC voltage and supplied to the DC-DC power unit, it also provides a constant voltage current limiting charging for the rechargeable lithium battery in the device through the DC-DC circuit, and generates a voltage +5V and +8.5V through power conversion to supply power to the appropriate module. At the same time, the lithium battery in the device can independently meet the working requirements of each module in the device through the buck-boost circuit.

⚠ **Note: Principle block diagrams and component lists are only available to service stations or maintenance personnel designated by our company.**

4.1.2 Signal acquisition unit

The signal acquisition unit uses a floating arrangement, which is a signal acquisition and processing system, including an analog circuitry section and A/D conversion (with 24bit sampling accuracy) and a data processing section. The analog circuit consists of the following signal, amplification, anti-aliasing low-pass filtering, lead-off detection and overload detection. The CPU system is responsible for coordinating the work of each circuit such as the A/D converter, lead-off detection circuit and overload detection circuit, to achieve signal acquisition, processing and lead-off detection. The control and A/D conversion and data acquisition information between the floating circuit and the solid circuit is transmitted through the optoelectronic coupler.

4.1.3 control unit

a) Principle of control unit

The control system consists of a printing system, a button system, a liquid crystal display system and a signal acquisition system. The ECG signal sent from the signal acquisition system through the high-speed optoelectronic coupler is received by the CPU system, after digital filtering, gain adjustment and motor drive, is sent to the printing system to print the ECG waveform. After printing is complete, the CPU system processes waveform measurement and analysis. The CPU system also receives the interrupt signal and key code from the key system to complete the interrupt processing. In addition, the lead-off signal, paper-out detection, battery voltage management, and automatic power-off are also managed by the CPU system. The liquid crystal display system receives data and comments from the CPU system to complete the device control status display.

b) The principle block diagram is shown in Figure 4-1

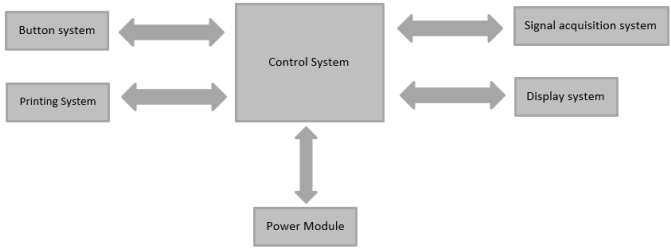


Figure 4-1 Control unit block diagram

4.2 The name of each part and its function

4.2.1 Front look

Figure 4-1 Front view

1) Paper compartment
   Close the paper compartment, holding the printing paper.
2) Screen display
   Displays the patient's ECG and related information.
3) Button area
   Control device operation, and enter information.
4) Cover switch
   To open or close the paper compartment cover.

⚠ **Notes**

⚠ **Do not place heavy objects on the screen or hit them, otherwise the screen will be damaged.**

⚠ **When the device is not in use, cover it to prevent liquid spilling on the screen.**

⚠ **Do not use sharp objects to operate the buttons, otherwise it may cause permanent damage to the buttons.**

4.2.2 Side view

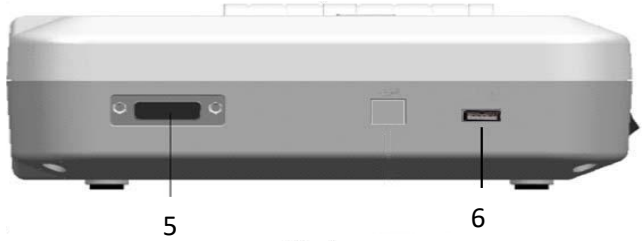


Figure 4-3 Side View

5) Lead cable interface
Connect with lead cable.

6) USB interface
Communicating with computers. ECG data and analysis results can be transmitted to the computer, using the computer, many functions can be achieved, such as archiving, managing and analyzing ECG data, which facilitates clinical research, organizational teaching and training, as well as program improvement, case import and export, and connection with an external printer.

⚠ **Notes**

a. lead cable must be disconnected from the patient before connecting with the computer via the USB interface.

b. The operator should not touch the USB interface and the patient at the same time.

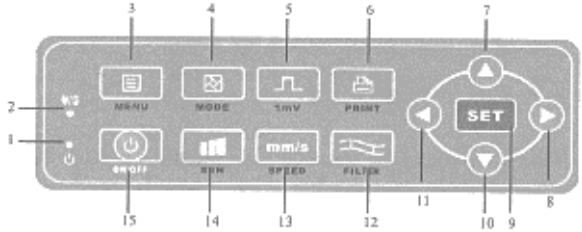
4.2.3 Back view

Figure 4-4 Rear View

7) equipotential terminal
Connect with potential equalization conductor

8) input socket
Connect with AC power cord.

4.2.4 Knob



1) Startup indicator
It glows green after turning on the device.
2) Power status indicator
Green indicates that the AC power supply is in use. At this time, there is no battery in the device or the battery is full. Two colors red and green indicate that the battery is charging.
3) Menu
Menu button
4) MODE
When the device is in the sampling interface, use the MODE button to select the print mode.
5) lmV
calibration button
6) PRINT
Print a sample ECG waveform or finish printing.
7) Direction keys

up button

8) Direction keys
right button
9) SET
System menu and confirmation.
10) Direction keys
down button
11) Direction keys
Left button
12) FILTER
Set filter mode.
13) SPEED
Change ECG recording speed
14) SEN
Adjust the sensitivity manually.
15) LIFE AND DEATH
When the device is powered on, short press this button, it will ask whether to turn off the device, long press this button to turn off the device.

4.2.5 Symbol

~ **AC**	AC working mode
	equipotential point
	Places need attention, please refer to the user manual
	CF applied art type, with defibrillation - proof function
	USB interface
 TIENT	Lead cable socket
SN	Serial number
	Manufacturer

	Manufacturer date
	Batch code
	latex free
	Atmospheric pressure limit
	Temperature limitation
	Moisture limitation
	This way
	Fragile, handle with care
	Keep away from rain
	Stacking limit by number

Chapter 5 Operational Precautions

5.1 Precautions before use

5.1.1 For safe and effective use, please read the user manual carefully before operation.

5.1.2 Check to make sure that the device is in good condition.

5.1.3 The device must be placed on a flat surface, and move gently to avoid strong vibrations or shocks

5.1.4 Check to make sure that the main cable is properly connected, and that the device is properly grounded.

5.1.5 The AC frequency and voltage must meet the requirements, and sufficient current capacity must be guaranteed.

5.1.6 When using the battery for power supply, check to make sure that the battery voltage and battery status are in good condition, and that the battery has sufficient charge.

5.1.7 When the device is used in conjunction with other equipment, all devices and equipment must be equipotentially earthed to protect the user and operator.

5.1.8 Install the device in an easily grounded area in the room. Do not allow the lead wires and electrodes connected to the patient and patient to come into contact with other parts of the conductor, including earth or hospital beds.

5.1.9 Clean the lead wires with neutral solvent. Do not use alcohol or gemicide based cleaners.

5.1.10 Ensure that the device operates within the normal ambient temperature range from 5°C to 40°C. If the device is stored at a higher or lower temperature, leave it in the operating environment for at least 10 minutes before use to ensure normal functioning.

5.2 Precautions during operation

5.2.1 Printing can begin once the ECG waveform stabilizes.

5.2.2 During use, the doctor should observe the patient carefully and cannot leave the operation site. If necessary, turn off the power or remove the electrodes to ensure patient safety.

5.2.3 The patient and the device can only be connected via lead wires through the electrodes, to avoid the patient touching other parts of the device or conductors.

5.2.4 The patient cannot move during the operation.

5.2.5 Maintenance or repair of the device or accessories is not permitted during use.

5.3 Precautions after use

5.3.1 Set the state of all functions to initial state.

5.3.2 Disconnect the power, gently remove the electrode and limb clip, then remove the lead wire, do not pull it by force.

5.3.3 Clean the device and all accessories, and save them for future use.

Chapter 6 Preparations Before Surgery

6.1 Recording paper installation

6.1.1 This device adopts high speed recording paper, the specification is 80 mm(W)x20 m(L).

6.1.2 How to install the recording paper is explained as follows:

1) As shown in Figure 6-1, open the paper cabinet cover, remove the paper wick, insert it into the paper roll as shown in the figure. The side of the paper with the grid should be facing down, then snap it into the proper position in the paper cabinet.

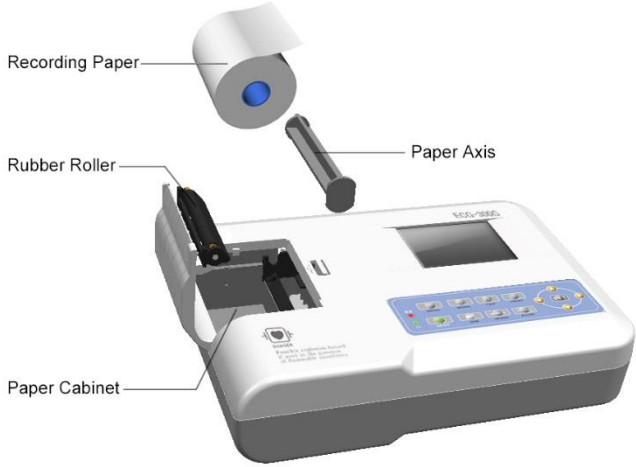


Figure 6-1 Installation of recording paper

2) Close the paper cupboard cover, preferably leaving 2cm of paper outside the paper cupboard exit.

⚠ **Notes**

⚠ **The recording paper should line up with the slots of the paper cabinet cover. It is recommended to leave 2 cm paper outside.**

6.1.3 If the recording paper runs out during recording, the device will stop printing automatically, and the screen will display a paper shortage warning as shown in Figure 6-2.

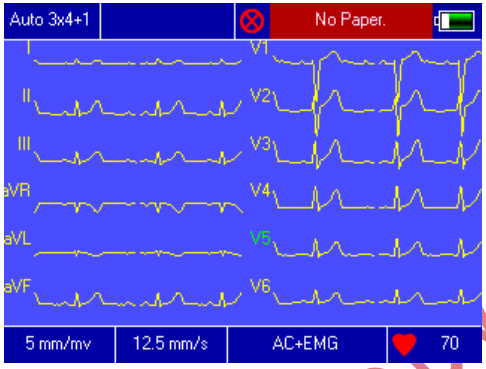


Figure 6-2 Lack of paper demand

6.2 Power supply connection

6.2.1 AC

Insert one end of the supplied three-core power cable into the input socket of the device, and insert the other end into the three-core power socket that meets the requirements. Ensure that the connection is secure and reliable, and that the device is automatically grounded.

When the device is used in conjunction with other medical equipment, use the supplied potential equalization cable to connect the equipotential terminal of the device to the equipotential terminal of the connected equipment to prevent leakage current and protect the device.

6.2.2 Battery

The device has a rechargeable lithium battery, which does not need to be reinstalled by the user. Check the power and battery status before use.

⚠ **Note: Connect one end of the potential equalization cable to the equipotential terminal of the device, and connect the other end to earth to increase the reliability of the earth . Do not use other pipes as ground wires , otherwise the patient may be in danger of electric shock.**

6.3 Lead cable connection

Connect the main cable to the main cable interface on the device, and secure it to the device with mounting knobs on both sides of the main cable to prevent poor connection and affect detection.

⚠ **Note: The main cable interface cannot be used for any other purpose except as an ECG signal input interface.**

6.4 Electrode installation

Correct electrode placement is an important part of accurately recording an electrocardiogram. Make sure the electrodes are in good contact. Old electrodes and new electrodes or reusable electrodes and disposable electrodes cannot be used at the same time. If different types of electrodes are used together, it will greatly affect the ECG recording. The electrodes or plug leads must not touch the surface or conductors of other objects, such as metallic coatings. Please replace everything when updating electrodes.

6.4.1 Chest Electrodes

As shown in Figure 6-3:

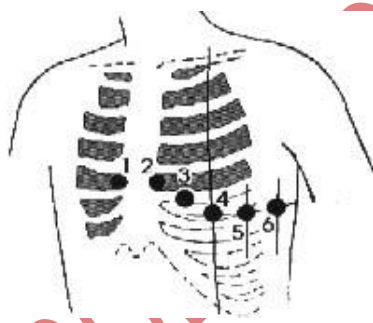


Figure 6-3 Installation of chest electrodes

The chest electrode must be attached to the following parts:
Cl (V1) : fourth intercostal space at the right sternal edge
C2 (V2) : fourth intercostal space at the left sternal margin
C3 (V3) : between C2 and C4
C4 (V4) : the intersection of the midclavicular line and the fifth intercostal space
C5 (V5) : left anterior axillary line in the same plane as C4
C6 (V6) : left midaxillary line in the same plane as C4
Clean the skin of the chest where the electrodes are to be attached with alcohol, and apply the sonie conductive paste to this skin (diameter range is about 25 nun) and the edges of the suction cup of the chest electrodes. Squeeze the suction ball to attach the chest electrode in the Cl-C6 position.

⚠ **Note: The conductive paste layers must be separated from each other, and the chest electrodes must not touch each other to avoid short circuit**

6.4.2 Limbs Electrodes

Leg electrodes should be placed on the soft skin of the hands and feet. Before connecting, clean the skin of the electrode installation area with alcohol, then apply a small amount of conductive paste on the cleaned skin. The limb electrode connections are shown in Figure 6-4.

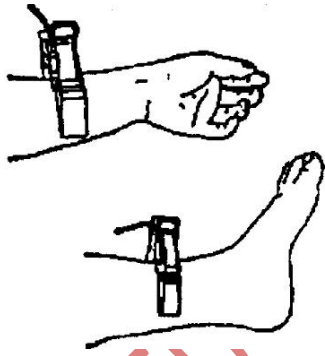


Figure 6-4 Installation of extremity electrodes

6.4.3 Lead wire color

Notes: In practical use, if the electrode markings do not match the markings described in the user manual, please follow the European/American standards in the table below to use. The correspondence of the electrodes in each standard is shown in Table 6-1 6

Table 6-1 Colors of lead wires.

electrode position	European standard		American standard	
	Tag	Color	Tag	Color
right arm	R	Red	RA	White
Left arm	L	Yellow	LA	Black
Left Foot	F	Green	LL	Red
Right foot	N/RF	Black	RL	Green

1 chest	C1	Red	V1	Red
Chest 2	C2	Yellow	V2	Yellow
Chest 3	C3	Green	V3	Green
Chest 4	C4	Chocolate	V4	Blue
Chest 5	C6	Black	V5	Orange
Chest 6	C6	Purple	V6	Purple

⚠ **Notes:**

- **It is recommended to install the main cable after turning off the device.**
- **Apply an appropriate amount of conductive paste on the electrodes when attaching the electrodes.**
- **If the ECG waveform does not appear for a long time, check that the electrodes are in good contact with the skin.**

6.4.4 Prospect method and system

As shown in Figure 6-5

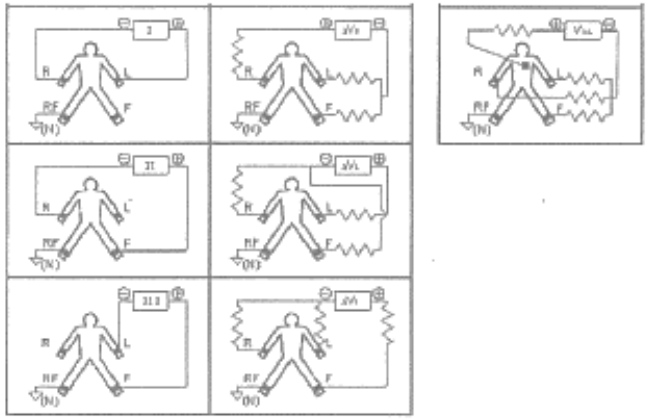


Figure 6-5 Lead System

6.4.5 Lead-off and overload indication

The device can check the connection status of the leads at any time. If a lead-off or overload is detected, the display will display the corresponding lead code in the upper left corner.

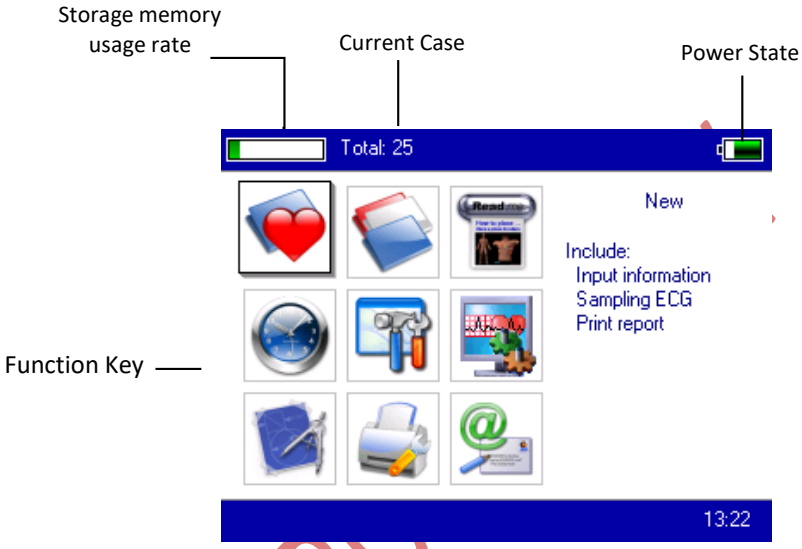
⚠ **Notes**

- **In the initial prompt area, red fonts represent start, yellow fonts represent excess.**
- **When the connection between the lead wire and the patient/device is unreliable, and the ECG signal cannot be transmitted properly, the device displays a lead-off.**

Chapter 7 Operating Instructions and Setting Parameters

7.1 Main Interface

As shown in the picture below Power status: see 9.1



Function keys:

To enter the sampling interface, generally the device will automatically enter this interface after power on

To enter the case management interface, in this interface, use can request, modify or delete case information.

lead placement

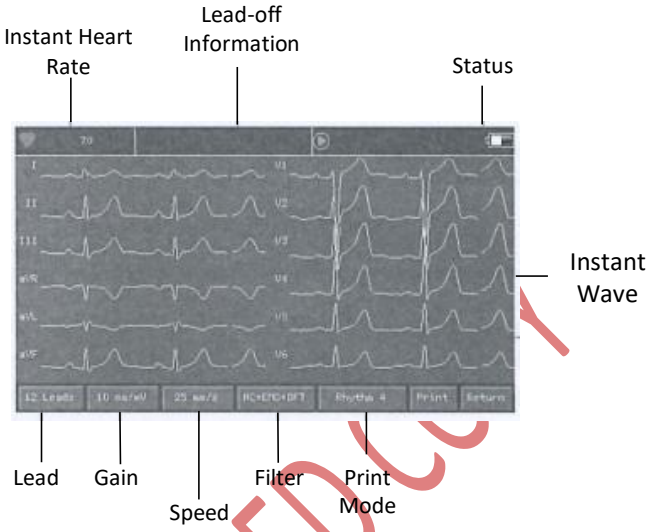
	To set the time and date
	To perform system settings
	To make sampling settings
	To set the parameters used automatically and analyze
	To set the print mode, print style and print content, etc.
	To view information about our company, software version.

7.2 Sampling Interface

Click  on the main interface or  press the button to enter the sampling interface.

Note: There is case input time in system settings, therefore, case information must be entered before formal sampling. (see 7.3 for details).

The sampling interface provides multiple lead display modes, including 3-lead, 6-lead and 12-lead. The following image uses 12-leads as an example:



End of sampling : Once the device has started sampling, use the use button to end sampling, and return to the main interface.

Switch leads: When the device does not simultaneously display 12 leads, use use and buttons to switch the waveform displayed.

Change lead display style: use and button to switch the display style between 3-lead, 6-lead and 12-lead.

Initial information: In demo mode, it displays "DEMO ECG". In sampling mode, it displays the status of detected leads.

Print mode: use button to switch print mode between Manual, Auto 4x3, Auto 3x4+1, Auto 3x4, Auto 2x6+1, Auto 2x6, Auto 3-2+1, Auto 3-2, Rhythm 4, Rhythm 3 and Rhythm 2.

Gain (sensitivity): use the use button to change the gain between 5 mm/mV, 10 mm/mV, and 20 mm/mV. The overall gain (sensitivity) can be checked with the calibration function.

Speed: use 

the buttons to change the speed between 12.5 mm/s, 25 mm/s, and 50 mm/s.

Filter: use  the button to switch the filter between no filter, AC, EMG, DFT, AC+EMG, AC+DFT, EMG+DFT and AC+EMG+DFT.

Where,

AC	filter AC
EMG	Filters EMG
DFT	Filter

Display calibration signal: after pressing the MEI button, a 1 mV signal will appear on the screen once.

Note: Calibration is an automatic process, users don't need to press any button.

Print/End print: use  the button to start or end the print operation.

Automatic mode: After starting to print, the system automatically prints and saves a real-time 12 lead ECG waveform. The length is determined by the relevant setting in the print settings. Based on the settings, the data and analysis conclusions are automatically printed, and the system automatically ends printing.

Manual mode: After starting to print, the user needs to change the leads to print the waveform of different leads, that is, the ECG printed in manual mode is out of sync, and the data is not saved. The user needs to press the PRINT button again when printing needs to be stopped.

During printing , the contents of the print status display include:

Show content	Explanation
Process …	In the process of printing
Wait …	In the process of ending printing
No Paper .	Lack of paper, the user must restart the operation after filling the paper.
Print Timeout .	The connection between the system and the printing sub-system is broken.
ECG Timeout	The connection between the sampling system and sub-system is severed.
Low Power	Low power, the system cannot start a print job.

Note: You cannot print until the ECG waveform is displayed on the screen.

In the current interface, press SET to enter the quick setting interface, as below:

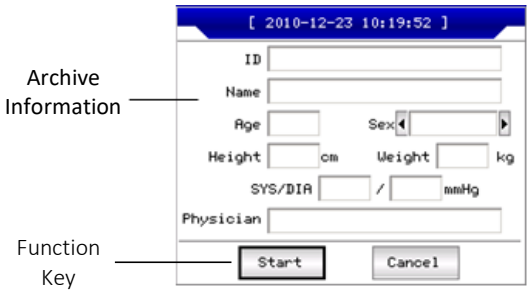
Click "OK" to apply the new settings and return to the sampling interface. Temporarily click "Cancel" to de-apply and go straight back to the sampling interface.

The optional contents of each setting item and their descriptions are shown in the following table:

Goods	Optional content	Saying
AC filters	[ACTIVE] / [DEAD]	Turning on or off the AC filter
EMG filters	[ACTIVE] / [DEAD]	Enable or disable the EMG filter
DFT filters	[ACTIVE] / [DEAD]	Enable or disable Basic filters
Rhythm Lead	One of 12 leads	Sets the rhythm lead used for printing under rhythm mode
Show Style	[3 Leads] / [6 Leads] / [12 Lead]	Set ECG display method
Show Reinforcement	[5mm/mV] / [10mm/mV] / [20mm/mV]	Set the displayed ECG gain
Show Speed	[12.5mm /s] / [25mm/s] / [50mm/s]	Set the displayed ECG speed.

7.3 Case Information Input Interface

Due to differences in system settings (see 7.8), users can choose to enter case information (including number, name, speed, etc.) before or after sampling, or not to enter case information, the dialog box is shown as below:

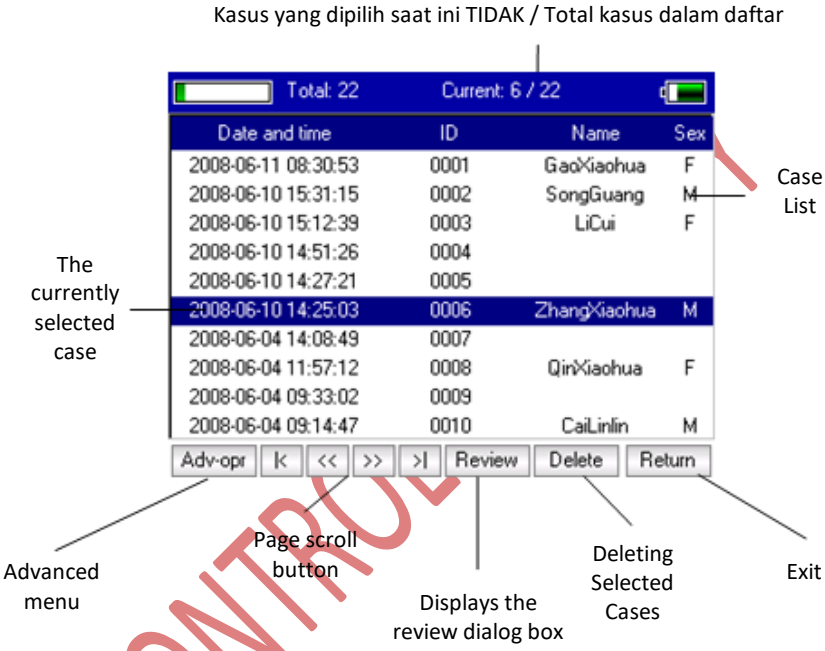


After selecting the edit box, press SET the key can appear soft keyboard shown as below. Clicking "Caps" can switch between numbers, lowercase letters, capital letters, and symbols. "Space" is the space key, press to enter a space; "Backspace" is the backspace key, press to delete the last character entered. Click "OK" to confirm entry and exit the interface.

The keyboard may have input restrictions according to content restrictions. Restricted keys will be grayed out and unavailable, as shown below:

7.4 Case Management

In the main interface, click  to enter the case management interface, as shown below:



The interface above shows all the medical records stored in the device. Users can search for the required cases with the query function in the interface (see 7.5), modify or delete case information with the edit function, and review the stored case information (see 7.6).

Click  to jump to the first page of the case list.

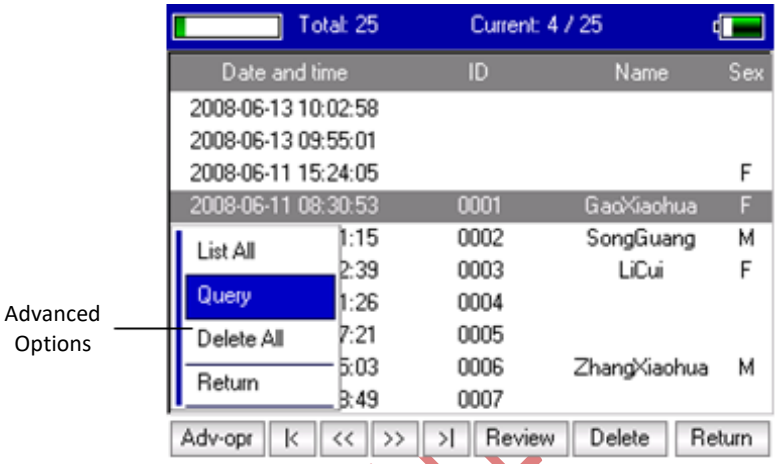
Click  to jump to the last page of the case list.

Click  to jump to the previous page.

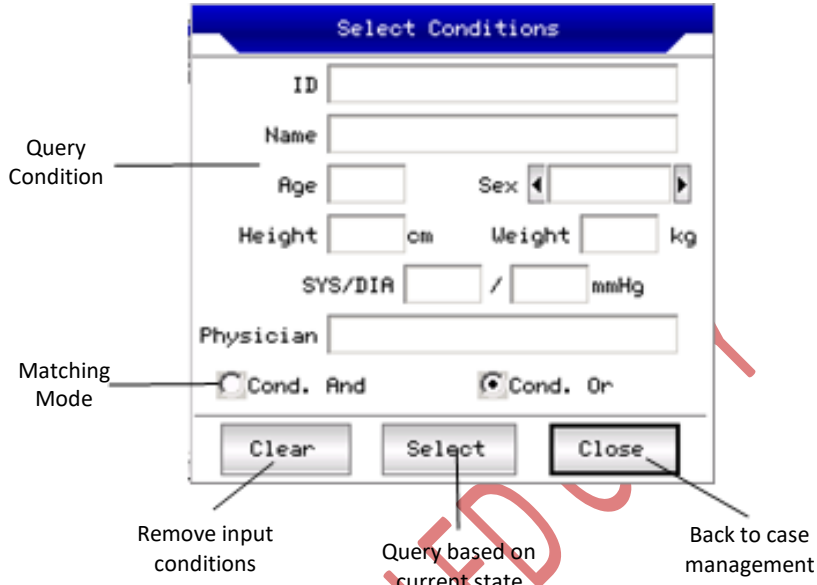
Click  to jump to the next page

7.5 Query

In the case management interface, click "Adv-opr" to enter the following interface:



Click " Query " to enter the Query interface shown below. Enter the query conditions and click " Query " to get the expected results. After clicking "Delete", the system will delete all the entered query conditions.

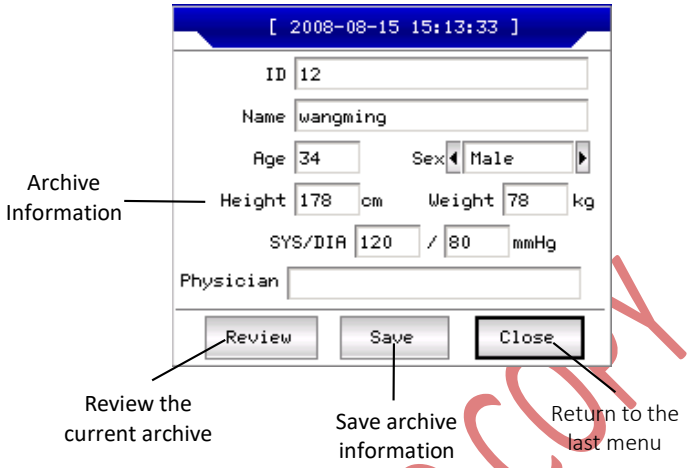


"Cond.And" and "Cond.Or" indicate the query condition matching mode . You can choose one of the two. If you select "Cond.And", the query results displayed will satisfy all input conditions simultaneously; if you select "Cond.Or", the query results that are displayed only need to satisfy one of the conditions entered.

Suggestion: When there are many cases, it is better to enter accurate query conditions and select "Cond.And" to find cases quickly.

7.6 Review

In the case management interface, select the case to review, click " Review " to enter the following dialog box, which displays the case information. Users are allowed to change patient information, after clicking " Save ", the information will be changed. Please note that modifications cannot be changed.



Make sure the input information is correct, click " Review " to enter the review interface, which is similar to the sampling interface.

In the current interface, the user can adjust the time period of the displayed waveform with and buttons, each press can move the waveform in the appropriate direction for 1 second, and the speed and gain can be changed.

In this interface, the user can use the buttons to change the print mode.
,

In this interface, the user can use the button to print.

In the current interface, press SET to enter the quick setting interface, as below:

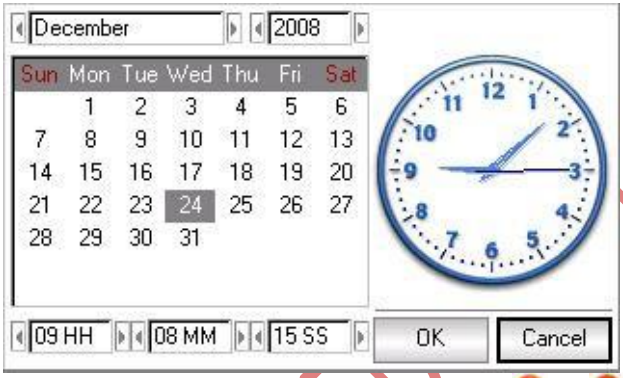
Click "OK" to apply the new settings and return to the review interface; temporarily click "Cancel" to de-apply and go straight back to the review interface.

The optional contents of each setting item and their descriptions are shown in the following table:

Goods	Choice	Saying
Print Mode	[4x3 Auto] /[3x4 Auto]/[2x6 Auto] and Other print modes applicable to the current case	Print mode setting.
Rhythm Lead	Each lead among 12 leads	Set the rhythm lead used for printing under rhythm mode
Show Style	[3 Prospects]/[6 Prospects]/[12 Prospects]	Set ECG display method
Show Advantage	[5mm/mV]/[10mm/mV]/ [20mm/mV]	Adjust the gain displayed by the ECG
Show Speed	[12.5mm/s]/[25mm/s]/[50mm/s]	Set the displayed ECG speed.

7.7 Date and Time Setting

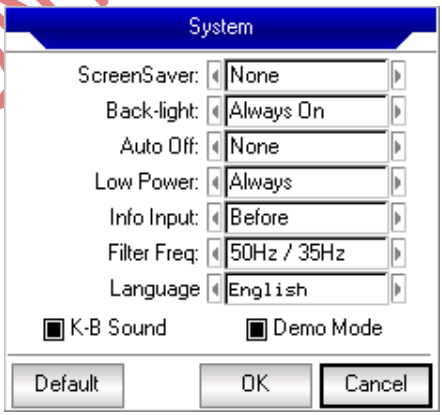
In the main interface, click  to enter the following interface to set the date and time.



In the current interface, users can replace items via  and  buttons, and customize item content with  and  buttons.

7.8 System settings

In the main interface, click  to enter the system settings interface, as shown below:

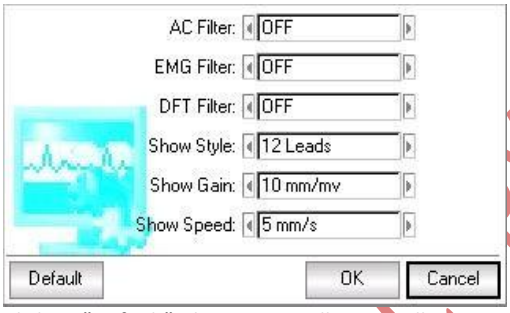


After clicking "Default", the system will return all settings to default. The optional contents of each setting item and their descriptions are shown in the following table:

Goods	Choice	Description
Screen saver	[None] /[30 Seconds]/[1 Minutes]/ [2 Mins]/[5 Mins]/[10 Mins Ice]	If there is no operation after the specified time, the screen saver will be active. If set to "None", this function will not be used
Taillight	[30 Seconds]/[1 Minute]\ /[2 Minutes]/[5 Minutes]/[10 Minutes]/ [Always On]	If there is no operation after the set time, the backlight of the display will turn off. If set to “Always On”, the backlight is always on.
Auto off	[None]/[1 Minute]/[3 Minutes]/[5 Minutes] / [10 Minutes]/[15 Minutes]/ [30 Minutes]/[60 Minutes]	If there is no operation after the set time, the system will automatically shut down If set to "None", the system will always power on
Low Power	[None]/[Only Once] / [Always]	It determines which alarm method the device uses in low power.
Filter Frequency	[50Hz/35Hz]/[50Hz/25Hz]/ [60Hz/25Hz]/[60Hz/35Hz]	To set the parameters of the AC filter and EMG filter.
Language	[English]/[Chinese], etc.	To set the system default language
KB sound	Life and death	KB sound on/off If selected, the button will make a sound when pressed, otherwise there will be no sound.
Demo mode	Life and death	If selected, the system will run in Demo mode; otherwise, the system will run in sampling mode.

7.9 Sampling Settings

In the main interface, click  to enter the sampling settings interface, as shown below:

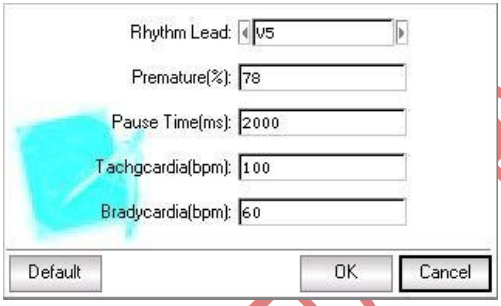


After clicking "Default", the system will return all settings to default. The optional contents of each setting item and their descriptions are shown in the following table:

Goods	Choice	Description
AC filters	[ON]/[OFF]	Turning on or off the AC filter
EMG filters	[ON]/[OFF]	Enable or disable the EMG filter
DFT filters	[ON]/[OFF]	Enable or disable Basic filters
Enter Information	[Before]/[After]/[None]	Set to enter case information before or after sampling, or not to enter
Show Style	[3 Prospects]/[6 Prospects]/[12 Prospects]	Set ECG display method
Show Advantage	[5mm/mV]/[10mm/mV] /[20mm/mV]	Set the displayed ECG gain
Show Speed	[12.5mm/s]/[25mm/s]/[50mm/s]	Set the displayed ECG speed

7.10 Analysis Parameter Setting

In the main interface, click  to enter the analysis parameter setting interface, as shown below: The settings here will affect real-time analysis during sampling, case review, and diagnosis requests from printed reports.

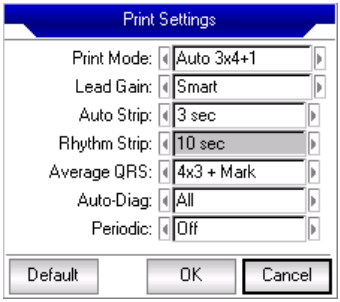


After clicking 'Default', the system will return all settings to their defaults. The optional contents of each setting item and their descriptions are shown in the following table:

Goods	Description
Rhythm Leader	Set the rhythm lead used to print under rhythm mode
Premature	To turn the heartbeat sound on or off
Pause Time	The system will use the input value as a standard to judge premature beats
Tachycardia	The system will use the input value as a standard for assessing tachycardia.
Bradycardia	The system will use the input value as the standard for assessing bradycardia.

7.11 Print Settings

In the main interface, click  to enter the print settings interface, as shown below:



In the print settings interface, click "Adv-opr" to enter the advanced settings interface:

Type	Goods	Choice	Description
General settings	Print Mode	[Auto 4x3]/[Auto 3x4+1]/[Auto 3X4]/[Auto 2x6+1]/[Auto 2x6]/[Auto 3-2+1]/[Auto 3-2]/[Rhythm 4]/[Rhythm 3]/[Rhythm 2]/[Manual]	The system takes the selected option as the default print mode
	Lead Advantage	[Smart]/[Current]	The selected option will be used as the print gain mode. "Smart" means the system will adjust the gain automatically to match the paper height; "Current" means it will use screen waveform gain just like printing.

	Auto Strip	[3 seconds]/[4 seconds]/[5 seconds]/[6 seconds]/[8 seconds]/[10 seconds]/[15 seconds]/[20 seconds]/[25 seconds]/[30 seconds]	The system takes the selected option as the print time length of each strip.
	Rhythm Path	[10 sec]/[15 sec]/[20 sec]/[25 sec]/[30 sec]	When “Print Mode” is set to “Rhythm 2” “Rhythm 3” or “Rhythm 4”, the system takes the selected option as the print time length of each waveform
	Average QRS	[2x6]/[2x6+ Mark]/[3 x4]/[3 x4+ Mark]/[4 x3]/[4 x 3+ Mark]/[None]	When "Print Mode" is set to "Auto" or "Rhythm", the system uses the selected format to print the average QRS waveform
	Automatic Diagnosis	[All]/[Data]/[Conclusion]/[Tone]	The diagnosis contains two-part data and conclusions, which the user can

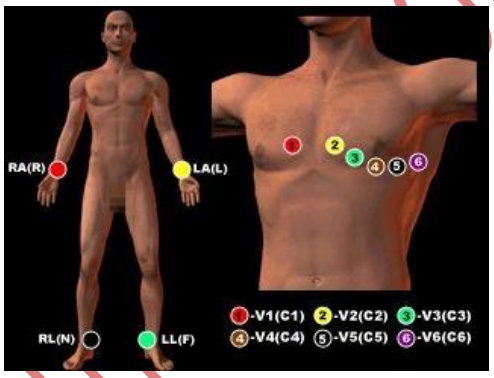
			select as a request.
	Point	[per 1Min]/[per 2Min]/[per3Min]/[per5Min]/ [perlMin0Min]/[per20Min]/[per 60Min]/[per 60Min]/[Off]	During the ECG acquisition process, the system will automatically activate the printing operation according to the selected time interval. When the printing mode is manual mode, printing will output "Auto 3x4+1" format, otherwise it will display according to the current setting mode
Advanced configuration	Print-Save	[Print and Save]/[Print without Save]/[Save without Print]	The user can choose to print or save the case after pressing the PRINT button during sampling.

Note 1: Automatic strip setting, rhythm strip, average QRS, auto diagnosis, and periodic print are only optional in auto mode and rhythm mode.

Note 2: If the length of the printing time is less than 8 seconds, the sampling and analysis time is 8 seconds; if the length of the printing time is equal to or greater than 8 seconds, the sampling and analysis time remains the same as the printing time.

7.12 Lead Placement

In the main interface, click  to view the lead placement schematic diagram.



Click any button to exit.

7.13 About

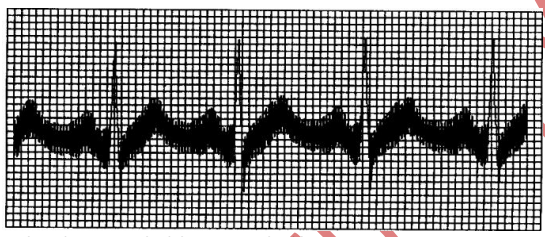
In the main interface, click  to view information about the device, which includes the device name, software version, our company name, copyright, and contact information.

Chapter 8 Troubleshooting

8.1 Auto Power Off

- The battery is running low, which causes the overdischarge protection circuit to act.
- The AC power supply voltage is too high, which causes the action of the overvoltage protection circuit.

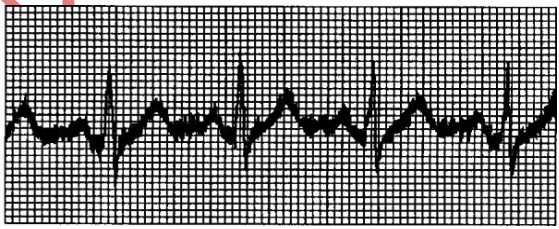
8.2 AC interface



- Is the device reliably grounded?
- Are the electrodes or lead wires properly connected?
- Are the electrodes and skin stained with sufficient conductive paste?
- Are metal beds reliably grounded?
- Did the patient touch the walls or metal parts of the bed?
- Does the patient touch other people?
- Are there high-power electrical equipment working nearby? Such as X-ray machine or ultrasonic device, etc.

⚠ **Note: If the interference cannot be eliminated after performing the above actions, use an AC filter.**

8.3 EMG interface

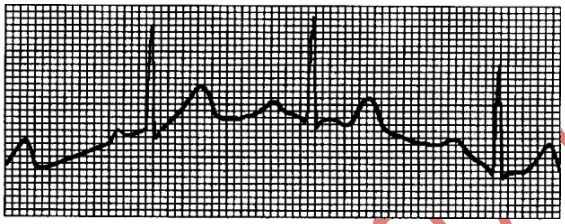


- Is the room comfortable?
- Is the patient nervous?
- Is the bedroom cramped?

- Did the patient speak during recording?
- Are the leg electrodes too tight?

⚠ **Note: If the noise cannot be removed after performing the above actions, use an EMG filter. The current recorded ECG waveform will be slightly attenuated**

8.4 Basic Shift



- Is the electrode installation stable?
- Is the lead wire or electrode connection reliable?
- Are the electrodes and patient's skin cleaned and smeared with sufficient conductive paste?
- Is it caused by the patient's movement or breathing?
- Are the electrodes or wires in a bad connection?

⚠ **Note: If the annoyance cannot be resolved after taking the above actions, use a basic filter.**

8.5 Troubleshooting List

Phenomenon	Cause of failure	Solution
The interference is too big, the waveform is irregular	1. The ground wire is not connected reliably. 2. Lead wires are not connected reliably. 3. There is an AC problem. 4. The patient is restless and cannot stay still.	1. Check the power cord and lead wires. 2. Let the patient prepare for the measurement.
Baseline	1. Big AC disturbance. 2. The patient is nervous, and the	1. Improve the environment. 2. If the bed is made of steel, replace it.

	EMG disturbance is major.	3. The power cable and lead are misaligned or too close to each other.
Not the usual waveform, big up and down, straight to the picture	1. Poor electrode conductivity. 2. Low battery. 3. Poor connection between the electrodes and the patient's skin. 4. Loose connection between main cable and device plug. 5. Poor connection between electrodes and lead wires.	1. Use high quality alcohol. 2. Clean the electrode slices and the skin under the electrodes with alcohol. 3. Charging.
Basic draft	1. low power. 2. Patient movement.	1. Charging. 2. Keep patient
Unclear waveform	1. Low battery. 2. The surface of the printer head is dirty. 3. Thermal paper problem.	1. Charging. 2. Turn off the power, clean the printer head with alcohol, dry it. 3. Replace thermal printing paper with specified

Chapter 9 Maintenance

9.1 Battery

9.1.1 This device is designed with a rechargeable and maintenance-free lithium battery, it is also equipped with a perfect automatic charging monitor system. When the device is connected to AC power, the battery will be charged automatically. The battery status will be displayed on the right edge of the LCD screen when it is on, as shown in Table 9-1. Once completely discharged, the battery needs 5 hours to charge to 90%, and 5.5 hours to charge to full capacity.

Table 9-1 Battery status display

No.	icon	Description
a		Status unknown, usually displayed when the instrument is turned on in 1 minute
b		Using AC power
c		Using battery, and full power
d		Using battery, volume: 3/4
e		Using battery, volume: 1/2
f		Using battery, volume: 1/4
g		Using battery, but lower power, recommend recharging the battery or using AC AC power supply

Note : When charging the battery, the displayed battery level status will switch between f icon to c . icon

9.1.2 The device can print for 3 hours or work more than 10 hours in standby mode when the battery is fully charged. When the device is powered by battery, a battery icon will be displayed on the LCD screen, showing the battery capacity in 5 modes. When the battery capacity is too low for the operation of the device, the device will turn off automatically to avoid permanent damage to the battery. Note: The above data was obtained by

printing the demo waveform under a test environment of 25°C temperature, 25mm/s speed, and 10mm/mV gain. In actual use, the operating time may be shortened due to the operating conditions and environment

9.1.3 The battery should be recharged timely after it is completely discharged. If it is not used for a long time, the battery must be recharged every 3 months, which can extend the life of the battery.

9.1.4 When the battery is not rechargeable or works no more than 10 minutes after being fully charged, please replace the battery.

⚠ Notes :

- **Do not attempt to disassemble a sealed battery without permission. Battery replacement must be carried out by professional maintenance personnel authorized by our company, and the same model of rechargeable battery provided by our company must be used.**
- **Do not touch the positive and negative terminals of the battery directly with the wires, otherwise there is a fire hazard.**
- **Do not use the battery near sources of ignition or in an environment where the temperature exceeds 60°C. Do not heat the battery or throw it into fire, water and avoid splashing water.**
- **Do not puncture, hammer or hit the battery or destroy it in any other way, otherwise it will cause the battery to overheat, smoke, deform or a hazard of fire.**
- **Keep it away from the battery when it leaks or emits an unpleasant odor. If battery electrolyte leaks onto skin or clothing, wash it off immediately with water. If electrolytes accidentally get into your eyes, do not rub your eyes, wash them immediately with water and see a doctor.**
- **If the battery reaches its useful life, or the battery smells, changes shape, changes color, or is damaged, please stop using the battery and dispose of it in accordance with local regulations.**

9.2 Recording Paper

To ensure the quality of the ECG waveform, use high-speed thermal recording paper supplied or specified by the company. If you use unspecified recording paper, the recorded ECG waveform may be blurred, faded, and the paper feed may not be smooth. This can even increase device wear and shorten the life of critical parts such as thermal print heads. For information on how to purchase the tape, please contact your dealer or company. Please be careful!

9.2.1 When using recording paper, it is absolutely not allowed to use recording paper with a waxy or grayish/black surface. Otherwise, the wax will

stick to the printhead heating parts, resulting in abnormal jobs or damage to the printheads.

9.2.2 High temperature, humidity and sunlight can cause the recording paper to change color. Please store the recording paper in a dry and cool place.

9.2.3 Please do not place the recording paper under the fluorescent light for a long time, otherwise it will affect the recording effect.

9.2.4 Please do not mix the recording paper with PVC plastic, otherwise the color of the recording paper will change.

9.2.5 Please use the tape with the specified dimensions. Recording paper that does not meet the requirements may damage the thermal printhead or silicone rubber rollers.

9.3 Care after use

9.3.1 Press the button to turn off the device.

9.3.2 Unplug the power cable and lead cable. Hold the plug head to remove it, and do not pull the cord directly.

9.3.3 Clean the device and accessories, cover them from dust.

9.3.4 Store the device in a cool and dry place, avoid strong vibrations when moving.

9.3.5 When cleaning the device, do not immerse it in the cleaner. The power supply must be disconnected before cleaning. Use neutral detergent for cleaning. Do not use detergents or disinfectants that contain alcohol.

9.4 Leads and electrodes

9.4.1 The main cable connectivity can be detected by a multimeter. Check that each wire of the main cable is in good contact according to the following table. The resistance of each wire from the electrode plug to the corresponding pin in the main cable plug should be less than 10Ω, the integrity of the lead wire should be checked regularly. Any damage to the lead wire will cause a false waveform of the corresponding wire or all of the wires on the ECG. The lead wires can be cleaned with a neutral solvent. Do not use detergents or disinfectants that contain alcohol (Please do not immerse the lead in liquid for cleaning).

Note: The resistance of the lead cable with defibrillation resistant protection function is about 10KΩ.

Table 9-2 Lead wire markings and pin position wires

Tag	L (LA)	R (RA)	C1 (V1)	C2 (V2)	C3 (V3)	C4 (V4)	C5 (V5)	C6 (V6)	F (LL)	N (RL)
Oin position	10	9	12	1	2	3	4	5	11	14

9.4.2 Bending or knotting will shorten lead cable life. When using it, please straighten the lead wire first.

9.4.3 Electrodes must be stored properly. After prolonged use, the surface of the electrode may be oxidized and discolored due to corrosion and other factors, which may affect signal gain. In this case, the electrode must be replaced.

9.5 Silicone rubber roller

The silicone rubber roller must be smooth and free from smudges, otherwise it will affect the ECG recording effect. To remove stains on the rollers, use a clean soft cloth dampened with a small amount of alcohol to wipe them along the longitudinal direction, and roll the rollers in the direction of paper delivery while wiping them clean.

9.6 Cleaning the thermal thermal print leads

Dirt and dust on the surface of the TPH can affect the clarity of the waveform. To clean the surface of the printhead, open the paper compartment cover after turning off the device, use a clean, soft cloth moistened with alcohol to gently wipe the surface. For residual stains on the print head, moisten it with a small amount of alcohol first, then wipe with a soft cloth. Never use a hard object to scratch the surface, otherwise the printhead will be damaged. Wait for the alcohol to evaporate, then close the paper compartment cover. The printhead should be cleaned at least once a month during normal use.

9.7 Product waste disposal

Disposal of packaging materials, used batteries and devices at the end of their life must comply with local laws and regulations, and users should treat used products and materials properly in accordance with laws and regulations, and try to support classification and recycling work.

9.8 Other

9.8.1 Do not open the device cover to avoid electric shock hazard.

9.8.2 Device-related circuit schematics and lists of critical components are available only to authorized service stations or maintenance personnel, who are responsible for maintaining the equipment.

9.8.3 The device belongs to the measuring instrument. The user must send the device to the designated national inspection agency for inspection in accordance with the requirements of the national metrological verification procedure. Devices should be inspected at least once a year, and all accessories should be inspected and maintained regularly (at least every six months).

Chapter 10 Packing List and Accessories

10.1 Companion accessories

When the device is shipped from the factory, the intact packaging must contain the following contents, as shown in Table 10-1:

Table 10-1 List of packaging and accessories

Name	Quantity
Electrocardiograph	1 piece
Chest electrode (suction cup/ slice electrode)	1 set (6pcs)
Leg electrode (leg clip)	1 set (4pcs)
ECG lead cable	1 piece
Potential equalization wire	1 piece
power cord	1 piece
User guide	2 pieces
Recording paper	3 pieces

10.2 Notes

10.2.1 Follow the instructions on the package when opening the package.

10.2.2 After unpacking, please check the accessories and accompanying documents according to the packing list, then start inspecting the device.

10.2.3 If the contents of the package do not meet the requirements or the device does not function properly, please contact our company immediately.

10.2.4 Please use the accessories provided by our company, otherwise the performance and safety of the device may be affected. If the accessories provided by other companies need to be used, please consult the after-sales service of our company first, or we will not be responsible for any damage caused.

10.2.5 Packages must be stored properly for future use in routine maintenance or device repair.

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